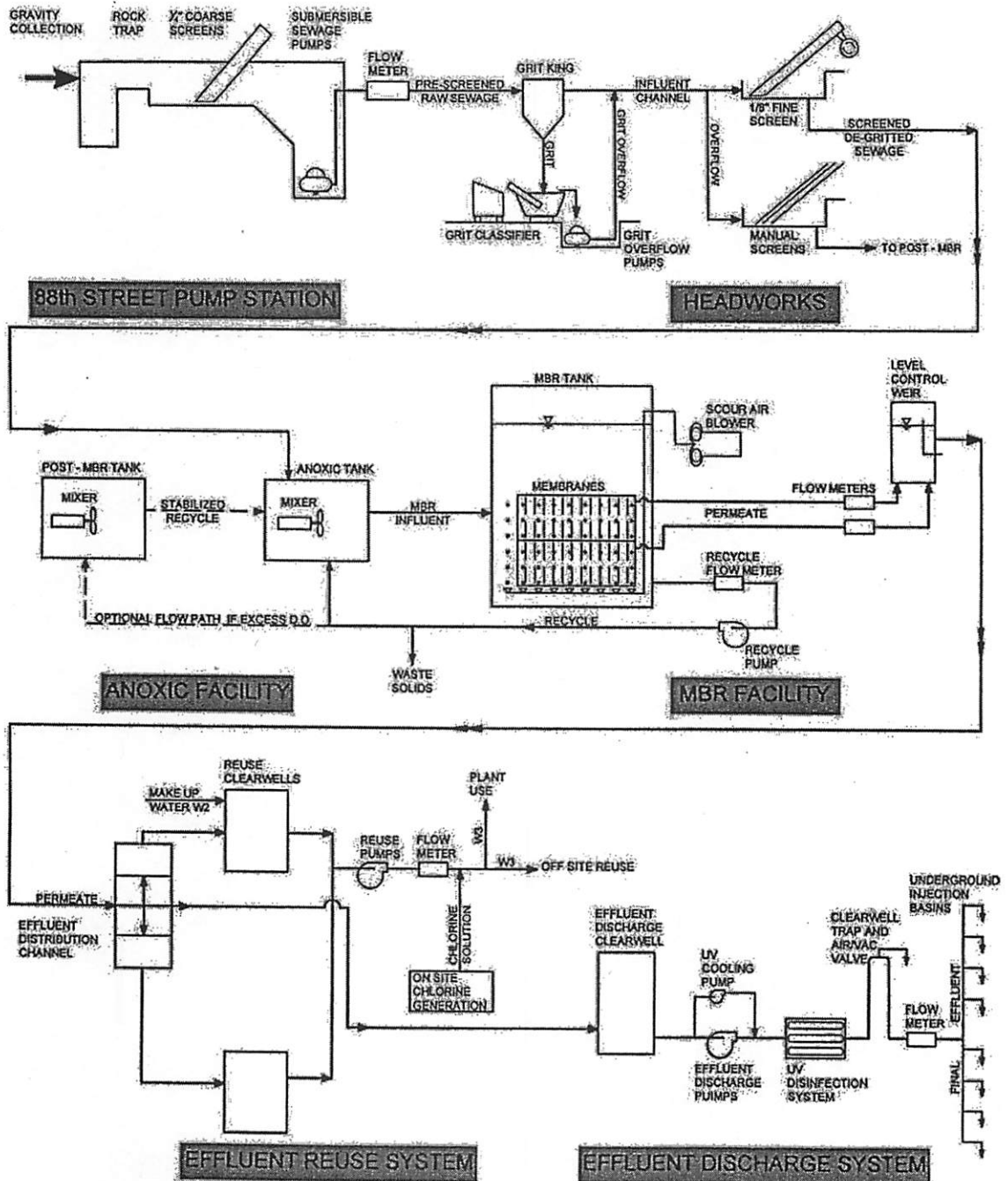


TULALIP TRIBES WASTEWATER TREATMENT AND REUSE FACILITY SITE OVERVIEW





PROCESS OVERVIEW



The membrane filtering process

The membranes inside the MBR tank form a physical barrier to "trap" the biological treatment process within the plant. Figure 2D below shows the main components of the MBR filter system.

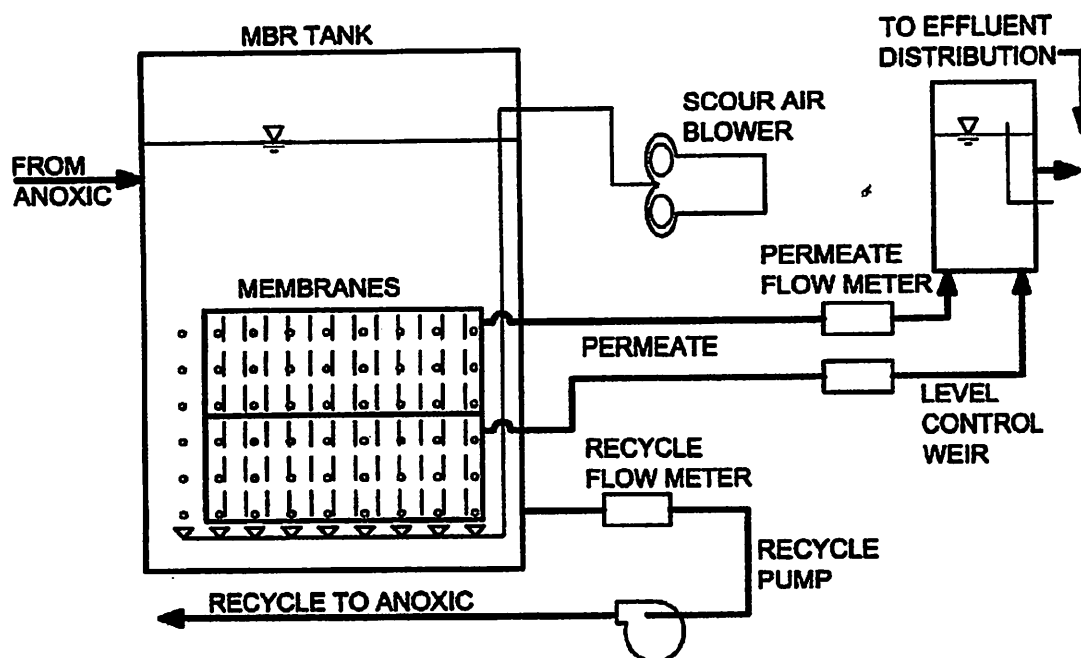
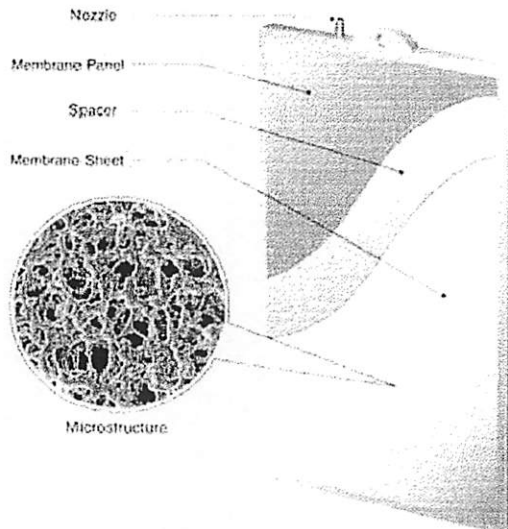


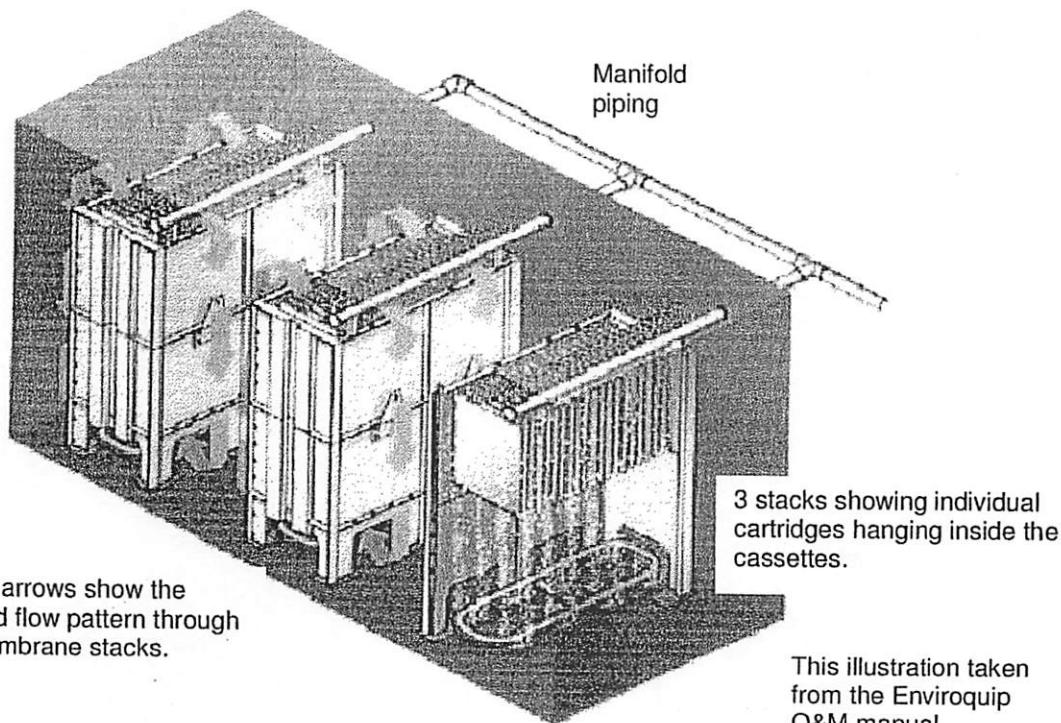
FIG 2D: MBR FACILITY

The membranes are built like thin, double-pane windows, approximately 2' x 4', and they hang vertically inside the tanks in racks called "cassettes". They are completely submerged in the mixed liquor, and 1/8" tubes lead from the hollow space between the "panes" of each "window".



The illustration at left was taken from the Enviroquip O&M manual.

These tubes are connected to a 2" manifold for each cassette, and the manifold piping penetrates through the wall of the MBR tank.



Yellow arrows show the induced flow pattern through the membrane stacks.